1.

```
mysql> CREATE DATABASE IF NOT EXISTS CareerHub;
Query OK, 1 row affected (0.01 sec)

mysql> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| careerhub          |
| college            |
| hexprac            |
| information_schema |
| mysql              |
| performance_schema |
| sakila             |
| school             |
| sisdb              |
| sql_hr             |
| sql_inventory      |
| sql_invoicing      |
| sql_store          |
| sys                |
| techshop           |
| ticketbookingsystem|
| world              |
+--------------------+
17 rows in set (0.02 sec)
```

2.

```
mysql> CREATE TABLE IF NOT EXISTS Companies (
    -> CompanyID INT PRIMARY KEY AUTO_INCREMENT,
    -> CompanyName VARCHAR(255),
    -> Location VARCHAR(255));
Query OK, 0 rows affected (0.03 sec)

mysql> DESC Companies;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| CompanyID   | int          | NO   | PRI | NULL    | auto_increment |
| CompanyName | varchar(255) | YES  |     | NULL    |                |
| Location    | varchar(255) | YES  |     | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
3 rows in set (0.01 sec)
```

```
mysql> CREATE TABLE IF NOT EXISTS Jobs (
    -> JobID INT PRIMARY KEY AUTO_INCREMENT,
    -> CompanyID INT,
    -> JobTitle VARCHAR(255),
    -> JobDescription TEXT,
    -> JobLocation VARCHAR(255),
    -> Salary DECIMAL,
    -> JobType VARCHAR(255),
    -> PostedDate DATETIME);
Query OK, 0 rows affected (0.01 sec)

mysql> DESC Jobs;
+----------------+---------------+------+-----+---------+----------------+
| Field          | Type          | Null | Key | Default | Extra          |
+----------------+---------------+------+-----+---------+----------------+
| JobID          | int           | NO   | PRI | NULL    | auto_increment |
| CompanyID      | int           | YES  |     | NULL    |                |
| JobTitle       | varchar(255)  | YES  |     | NULL    |                |
| JobDescription | text          | YES  |     | NULL    |                |
| JobLocation    | varchar(255)  | YES  |     | NULL    |                |
| Salary         | decimal(10,0) | YES  |     | NULL    |                |
| JobType        | varchar(255)  | YES  |     | NULL    |                |
| PostedDate     | datetime      | YES  |     | NULL    |                |
+----------------+---------------+------+-----+---------+----------------+
8 rows in set (0.00 sec)
```

```
mysql> CREATE TABLE IF NOT EXISTS Applicants (
    -> ApplicantID INT PRIMARY KEY AUTO_INCREMENT,
    -> FirstName VARCHAR(255),
    -> LastName VARCHAR(255),
    -> Email VARCHAR(255),
    -> Phone VARCHAR(255),
    -> Resume VARCHAR(255));
Query OK, 0 rows affected (0.02 sec)

mysql> DESC Applicants;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| ApplicantID | int          | NO   | PRI | NULL    | auto_increment |
| FirstName   | varchar(255) | YES  |     | NULL    |                |
| LastName    | varchar(255) | YES  |     | NULL    |                |
| Email       | varchar(255) | YES  |     | NULL    |                |
| Phone       | varchar(255) | YES  |     | NULL    |                |
| Resume      | varchar(255) | YES  |     | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
6 rows in set (0.00 sec)
```

```
mysql> CREATE TABLE IF NOT EXISTS Applications (
    -> ApplicationID INT PRIMARY KEY AUTO_INCREMENT,
    -> JobID INT,
    -> ApplicantID INT,
    -> ApplicationDate DATETIME,
    -> CoverLetter TEXT);
Query OK, 0 rows affected (0.01 sec)

mysql> DESC Applications;
+-----------------+----------+------+-----+---------+----------------+
| Field           | Type     | Null | Key | Default | Extra          |
+-----------------+----------+------+-----+---------+----------------+
| ApplicationID   | int      | NO   | PRI | NULL    | auto_increment |
| JobID           | int      | YES  |     | NULL    |                |
| ApplicantID     | int      | YES  |     | NULL    |                |
| ApplicationDate | datetime | YES  |     | NULL    |                |
| CoverLetter     | text     | YES  |     | NULL    |                |
+-----------------+----------+------+-----+---------+----------------+
5 rows in set (0.00 sec)
```

3.

```
mysql> ALTER TABLE Jobs
    -> ADD FOREIGN KEY (CompanyID) REFERENCES Companies(CompanyID);
Query OK, 0 rows affected (0.05 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> DESC Jobs;
+----------------+---------------+------+-----+---------+----------------+
| Field          | Type          | Null | Key | Default | Extra          |
+----------------+---------------+------+-----+---------+----------------+
| JobID          | int           | NO   | PRI | NULL    | auto_increment |
| CompanyID      | int           | YES  | MUL | NULL    |                |
| JobTitle       | varchar(255)  | YES  |     | NULL    |                |
| JobDescription | text          | YES  |     | NULL    |                |
| JobLocation    | varchar(255)  | YES  |     | NULL    |                |
| Salary         | decimal(10,0) | YES  |     | NULL    |                |
| JobType        | varchar(255)  | YES  |     | NULL    |                |
| PostedDate     | datetime      | YES  |     | NULL    |                |
+----------------+---------------+------+-----+---------+----------------+
8 rows in set (0.00 sec)
```

```
mysql> ALTER TABLE Applications
    -> ADD FOREIGN KEY (JobID) REFERENCES Jobs(JobID),
    -> ADD FOREIGN KEY (ApplicantID) REFERENCES Applicants(ApplicantID);
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> DESC Applications;
+-----------------+----------+------+-----+---------+----------------+
| Field           | Type     | Null | Key | Default | Extra          |
+-----------------+----------+------+-----+---------+----------------+
| ApplicationID   | int      | NO   | PRI | NULL    | auto_increment |
| JobID           | int      | YES  | MUL | NULL    |                |
| ApplicantID     | int      | YES  | MUL | NULL    |                |
| ApplicationDate | datetime | YES  |     | NULL    |                |
| CoverLetter     | text     | YES  |     | NULL    |                |
+-----------------+----------+------+-----+---------+----------------+
5 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Companies (CompanyName, Location)
    -> VALUES('Tech Solutions India', 'Mumbai'),
    -> ('Innovate IT Services', 'Bangalore'),
    -> ('Global Innovations', 'Delhi'),
    -> ('InfoTech Hub', 'Hyderabad'),
    -> ('Coders Paradise', 'Chennai'),
    -> ('DataCrafters', 'Pune'),
    -> ('WebWizards', 'Kolkata'),
    -> ('EduTech Innovations', 'Jaipur'),
    -> ('SmartSolutions Ltd', 'Ahmedabad'),
    -> ('SysGenius Technologies', 'Chandigarh');
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Companies;
+-----------+------------------------+------------+
| CompanyID | CompanyName            | Location   |
+-----------+------------------------+------------+
|         1 | Tech Solutions India   | Mumbai     |
|         2 | Innovate IT Services   | Bangalore  |
|         3 | Global Innovations     | Delhi      |
|         4 | InfoTech Hub           | Hyderabad  |
|         5 | Coders Paradise        | Chennai    |
|         6 | DataCrafters           | Pune       |
|         7 | WebWizards             | Kolkata    |
|         8 | EduTech Innovations    | Jaipur     |
|         9 | SmartSolutions Ltd     | Ahmedabad  |
|        10 | SysGenius Technologies | Chandigarh |
+-----------+------------------------+------------+
10 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Jobs (CompanyID, JobTitle, JobDescription, JobLocation, Salary, JobType, PostedDate)
    -> VALUES (1, 'Software Developer', 'Develop and maintain software applications.', 'Mumbai', 80000, 'Full-time', '2024-01-23 10:30:00'),
    -> (2, 'Data Scientist', 'Analyzing and interpreting complex data sets.', 'Bangalore', 120000, 'Full-time', '2024-01-22 09:45:00'),
    -> (3, 'Network Engineer', 'Designing and implementing computer networks.', 'Delhi', 90000, 'Full-time', '2024-01-21 11:15:00'),
    -> (4, 'UI/UX Designer', 'Creating visually appealing user interfaces.', 'Hyderabad', 95000, 'Full-time', '2024-01-20 12:00:00'),
    -> (5, 'Java Developer', 'Developing and maintaining Java applications.', 'Chennai', 85000, 'Contract', '2024-01-19 14:20:00'),
    -> (6, 'Database Administrator', 'Managing and optimizing databases.', 'Pune', 100000, 'Full-time', '2024-01-18 13:10:00'),
    -> (7, 'Web Developer', 'Building and maintaining websites.', 'Kolkata', 75000, 'Part-time', '2024-01-17 15:40:00'),
    -> (8, 'Education Consultant', 'Providing guidance on educational programs.', 'Jaipur', 80000, 'Contract', '2024-01-16 16:55:00'),
    -> (9, 'IT Support Specialist', 'Providing technical support to end-users.', 'Ahmedabad', 70000, 'Full-time', '2024-01-15 17:25:00'),
    -> (10, 'Systems Analyst', 'Analyzing and improving computer systems.', 'Chandigarh', 110000, 'Full-time', '2024-01-14 18:00:00');
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Jobs;
+-------+-----------+------------------------+-----------------------------------------------+-------------+--------+-----------+---------------------+
| JobID | CompanyID | JobTitle               | JobDescription                                | JobLocation | Salary | JobType   | PostedDate          |
+-------+-----------+------------------------+-----------------------------------------------+-------------+--------+-----------+---------------------+
|     1 |         1 | Software Developer     | Develop and maintain software applications.   | Mumbai      |  80000 | Full-time | 2024-01-23 10:30:00 |
|     2 |         2 | Data Scientist         | Analyzing and interpreting complex data sets. | Bangalore   | 120000 | Full-time | 2024-01-22 09:45:00 |
|     3 |         3 | Network Engineer       | Designing and implementing computer networks. | Delhi       |  90000 | Full-time | 2024-01-21 11:15:00 |
|     4 |         4 | UI/UX Designer         | Creating visually appealing user interfaces.  | Hyderabad   |  95000 | Full-time | 2024-01-20 12:00:00 |
|     5 |         5 | Java Developer         | Developing and maintaining Java applications.  | Chennai     |  85000 | Contract  | 2024-01-19 14:20:00 |
|     6 |         6 | Database Administrator | Managing and optimizing databases.            | Pune        | 100000 | Full-time | 2024-01-18 13:10:00 |
|     7 |         7 | Web Developer          | Building and maintaining websites.            | Kolkata     |  75000 | Part-time | 2024-01-17 15:40:00 |
|     8 |         8 | Education Consultant   | Providing guidance on educational programs.   | Jaipur      |  80000 | Contract  | 2024-01-16 16:55:00 |
|     9 |         9 | IT Support Specialist  | Providing technical support to end-users.     | Ahmedabad   |  70000 | Full-time | 2024-01-15 17:25:00 |
|    10 |        10 | Systems Analyst        | Analyzing and improving computer systems.     | Chandigarh  | 110000 | Full-time | 2024-01-14 18:00:00 |
+-------+-----------+------------------------+-----------------------------------------------+-------------+--------+-----------+---------------------+
10 rows in set (0.00 sec)
```

```
mysql> INSERT INTO Applicants (FirstName, LastName, Email, Phone, Resume)
    -> VALUES('Amit', 'Kumar', 'amit@example.com', '9876543210', '"C:\Users\Biswarup\Desktop\CodingChallenge\Amit.txt"'),
    -> ('Priya', 'Sharma', 'priya@example.com', '8765432109', '"C:\Users\Biswarup\Desktop\CodingChallenge\Priya.txt"'),
    -> ('Raj', 'Verma', 'raj@example.com', '7654321098', '"C:\Users\Biswarup\Desktop\CodingChallenge\Raj.txt"'),
    -> ('Anjali', 'Gupta', 'anjali@example.com', '6543210987', '"C:\Users\Biswarup\Desktop\CodingChallenge\Anjali.txt"'),
    -> ('Vikram', 'Singh', 'vikram@example.com', '5432109876', '"C:\Users\Biswarup\Desktop\CodingChallenge\Vikram.txt"'),
    -> ('Neha', 'Shah', 'neha@example.com', '4321098765', '"C:\Users\Biswarup\Desktop\CodingChallenge\Neha.txt"'),
    -> ('Sandeep', 'Mishra', 'sandeep@example.com', '3210987654', '"C:\Users\Biswarup\Desktop\CodingChallenge\Sandeep.txt"'),
    -> ('Swati', 'Rao', 'swati@example.com', '2109876543', '"C:\Users\Biswarup\Desktop\CodingChallenge\Swati.txt"'),
    -> ('Rahul', 'Joshi', 'rahul@example.com', '1098765432', '"C:\Users\Biswarup\Desktop\CodingChallenge\Rahul.txt"'),
    -> ('Pooja', 'Gandhi', 'pooja@example.com', '9876543210', '"C:\Users\Biswarup\Desktop\CodingChallenge\Pooja.txt"');
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Applicants;
+-------------+-----------+----------+---------------------+------------+-------------------------------------------------------+
| ApplicantID | FirstName | LastName | Email               | Phone      | Resume                                                |
+-------------+-----------+----------+---------------------+------------+-------------------------------------------------------+
|           1 | Amit      | Kumar    | amit@example.com    | 9876543210 | "C:UsersBiswarupDesktopCodingChallengeAmit.txt"       |
|           2 | Priya     | Sharma   | priya@example.com   | 8765432109 | "C:UsersBiswarupDesktopCodingChallengePriya.txt"      |
|           3 | Raj       | Verma    | raj@example.com     | 7654321098 | "C:UsersBiswarupDesktopCodingChallengeRaj.txt"        |
|           4 | Anjali    | Gupta    | anjali@example.com  | 6543210987 | "C:UsersBiswarupDesktopCodingChallengeAnjali.txt"     |
|           5 | Vikram    | Singh    | vikram@example.com  | 5432109876 | "C:UsersBiswarupDesktopCodingChallengeVikram.txt"     |
|           6 | Neha      | Shah     | neha@example.com    | 4321098765 | "C:UsersBiswarupDesktopCodingChallengeNeha.txt"       |
|           7 | Sandeep   | Mishra   | sandeep@example.com | 3210987654 | "C:UsersBiswarupDesktopCodingChallengeSandeep.txt"    |
|           8 | Swati     | Rao      | swati@example.com   | 2109876543 | "C:UsersBiswarupDesktopCodingChallengeSwati.txt"      |
|           9 | Rahul     | Joshi    | rahul@example.com   | 1098765432 | "C:UsersBiswarupDesktopCodingChallengeRahul.txt"      |
|          10 | Pooja     | Gandhi   | pooja@example.com   | 9876543210 | "C:UsersBiswarupDesktopCodingChallengePooja.txt"      |
+-------------+-----------+----------+---------------------+------------+-------------------------------------------------------+
10 rows in set (0.01 sec)
```

```
mysql> INSERT INTO Applications (JobID, ApplicantID, ApplicationDate, CoverLetter)
    -> VALUES (1, 1, '2024-01-23 11:00:00', 'I am excited about the opportunity to contribute as a Software Developer.'),
    -> (2, 2, '2024-01-22 10:00:00', 'My expertise in data science makes me a perfect fit for this role.'),
    -> (3, 3, '2024-01-21 11:30:00', 'I am passionate about designing and managing computer networks.'),
    -> (4, 4, '2024-01-20 12:30:00', 'My creative approach to UI/UX design sets me apart.'),
    -> (5, 5, '2024-01-19 14:30:00', 'I have a strong background in Java development and am ready to take on new challenges.'),
    -> (6, 6, '2024-01-18 13:30:00', 'I excel in optimizing and managing databases.'),
    -> (7, 7, '2024-01-17 15:45:00', 'I have experience in building and maintaining websites with a focus on user experience.'),
    -> (8, 8, '2024-01-16 17:00:00', 'As an education consultant, I am dedicated to helping students achieve their goals.'),
    -> (9, 9, '2024-01-15 17:30:00', 'I am skilled in providing IT support and solving technical issues.'),
    -> (10, 10, '2024-01-14 18:15:00', 'I bring analytical skills and expertise to improve computer systems.');
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Applicantions;
ERROR 1146 (42S02): Table 'careerhub.applicantions' doesn't exist
mysql> SELECT * FROM Applications;
+---------------+-------+-------------+---------------------+-------------------------------------------------------------------------------------------+
| ApplicationID | JobID | ApplicantID | ApplicationDate     | CoverLetter                                                                               |
+---------------+-------+-------------+---------------------+-------------------------------------------------------------------------------------------+
|             1 |     1 |           1 | 2024-01-23 11:00:00 | I am excited about the opportunity to contribute as a Software Developer.                 |
|             2 |     2 |           2 | 2024-01-22 10:00:00 | My expertise in data science makes me a perfect fit for this role.                        |
|             3 |     3 |           3 | 2024-01-21 11:30:00 | I am passionate about designing and managing computer networks.                           |
|             4 |     4 |           4 | 2024-01-20 12:30:00 | My creative approach to UI/UX design sets me apart.                                       |
|             5 |     5 |           5 | 2024-01-19 14:30:00 | I have a strong background in Java development and am ready to take on new challenges.     |
|             6 |     6 |           6 | 2024-01-18 13:30:00 | I excel in optimizing and managing databases.                                            |
|             7 |     7 |           7 | 2024-01-17 15:45:00 | I have experience in building and maintaining websites with a focus on user experience.  |
|             8 |     8 |           8 | 2024-01-16 17:00:00 | As an education consultant, I am dedicated to helping students achieve their goals.       |
|             9 |     9 |           9 | 2024-01-15 17:30:00 | I am skilled in providing IT support and solving technical issues.                        |
|            10 |    10 |          10 | 2024-01-14 18:15:00 | I bring analytical skills and expertise to improve computer systems.                      |
+---------------+-------+-------------+---------------------+-------------------------------------------------------------------------------------------+
10 rows in set (0.00 sec)
```

5.

```
mysql> SELECT j.JobID,j.JobTitle,
    -> COUNT(a.ApplicationID) AS ApplicationCount
    -> FROM Jobs j
    -> LEFT JOIN Applications a ON j.JobID = a.JobID
    -> GROUP BY j.JobID, j.JobTitle;
+-------+------------------------+------------------+
| JobID | JobTitle               | ApplicationCount |
+-------+------------------------+------------------+
|     1 | Software Developer     |                1 |
|     2 | Data Scientist         |                1 |
|     3 | Network Engineer       |                1 |
|     4 | UI/UX Designer         |                1 |
|     5 | Java Developer         |                1 |
|     6 | Database Administrator |                1 |
|     7 | Web Developer          |                1 |
|     8 | Education Consultant   |                1 |
|     9 | IT Support Specialist  |                1 |
|    10 | Systems Analyst        |                1 |
+-------+------------------------+------------------+
10 rows in set (0.00 sec)
```

6.

```
mysql> DELIMITER //
mysql> CREATE PROCEDURE GetJobsInRange(IN minSalary DECIMAL, IN maxSalary DECIMAL)
    -> BEGIN
    -> SELECT j.JobTitle,c.CompanyName,j.JobLocation,j.Salary
    -> FROM Jobs j
    -> JOIN Companies c ON j.CompanyID = c.CompanyID
    -> WHERE j.Salary BETWEEN minSalary AND maxSalary;
    -> END //
Query OK, 0 rows affected (0.00 sec)

mysql> DELIMITER ;
mysql> CALL GetJobsInRange(80000,95000);
+----------------------+----------------------+-------------+--------+
| JobTitle             | CompanyName          | JobLocation | Salary |
+----------------------+----------------------+-------------+--------+
| Software Developer   | Tech Solutions India | Mumbai      | 80000  |
| Network Engineer     | Global Innovations   | Delhi       | 90000  |
| UI/UX Designer       | InfoTech Hub         | Hyderabad   | 95000  |
| Java Developer       | Coders Paradise      | Chennai     | 85000  |
| Education Consultant | EduTech Innovations  | Jaipur      | 80000  |
+----------------------+----------------------+-------------+--------+
5 rows in set (0.01 sec)

Query OK, 0 rows affected (0.01 sec)
```

7.

```
mysql> DELIMITER $$
mysql> CREATE PROCEDURE GetJobApplicationHistory(IN applicantID INT)
    -> BEGIN
    -> SELECT JobTitle,CompanyName,ApplicationDate
    -> FROM Applications
    -> JOIN Jobs ON Applications.JobID = Jobs.JobID
    -> JOIN Companies ON Jobs.CompanyID = Companies.CompanyID
    -> WHERE Applications.ApplicantID = applicantID;
    -> END $$
Query OK, 0 rows affected (0.01 sec)

mysql> DELIMITER ;
mysql> CALL GetJobApplicationHistory(10);
+-----------------+---------------------+---------------------+
| JobTitle        | CompanyName         | ApplicationDate     |
+-----------------+---------------------+---------------------+
| Systems Analyst | SysGenius Technologies | 2024-01-14 18:15:00 |
+-----------------+---------------------+---------------------+
1 row in set (0.00 sec)

Query OK, 0 rows affected (0.00 sec)
```

8.

```
mysql> SELECT AVG(Salary) AS AverageSalaryOfAllCompanies
    -> FROM Jobs
    -> WHERE Salary > 0;
+-----------------------------+
| AverageSalaryOfAllCompanies |
+-----------------------------+
|                  90500.0000 |
+-----------------------------+
1 row in set (0.01 sec)
```

9.a

```
mysql> SELECT CompanyName, COUNT(JobID) AS JobCount
    -> FROM Companies
    -> JOIN Jobs ON Companies.CompanyID = Jobs.CompanyID
    -> GROUP BY CompanyName
    -> ORDER BY COUNT(JobID) DESC
    -> LIMIT 1;
+----------------------+----------+
| CompanyName          | JobCount |
+----------------------+----------+
| Tech Solutions India |        1 |
+----------------------+----------+
1 row in set (0.00 sec)
```

9.b

```
mysql> SELECT
    ->      CompanyName,
    ->      COUNT(JobID) AS JobCount
    -> FROM
    ->      Companies c
    -> JOIN
    ->      Jobs j ON c.CompanyID = j.CompanyID
    -> GROUP BY
    ->      CompanyName
    -> HAVING
    ->      JobCount = (
    ->          SELECT
    ->              COUNT(JobID)
    ->          FROM
    ->              Jobs
    ->          GROUP BY
    ->              CompanyID
    ->          ORDER BY
    ->              COUNT(JobID) DESC
    ->          LIMIT 1
    ->      );
+-------------------------+----------+
| CompanyName             | JobCount |
+-------------------------+----------+
| Tech Solutions India    |        1 |
| Innovate IT Services    |        1 |
| Global Innovations      |        1 |
| InfoTech Hub            |        1 |
| Coders Paradise         |        1 |
| DataCrafters            |        1 |
| WebWizards              |        1 |
| EduTech Innovations     |        1 |
| SmartSolutions Ltd      |        1 |
| SysGenius Technologies  |        1 |
+-------------------------+----------+
10 rows in set (0.00 sec)
```

10.

```
mysql> SELECT DISTINCT a.ApplicantID,a.FirstName,
    -> a.LastName,a.Email,a.Phone,a.Resume
    -> FROM Applicants a
    -> JOIN Applications app ON a.ApplicantID = app.ApplicantID
    -> JOIN Jobs j ON app.JobID = j.JobID
    -> JOIN Companies c ON j.CompanyID = c.CompanyID
    -> WHERE c.Location = 'Chennai'
    -> AND app.CoverLetter >= 3;
+-------------+-----------+----------+-------------------+------------+-----------------------------------------------------------+
| ApplicantID | FirstName | LastName | Email             | Phone      | Resume                                                    |
+-------------+-----------+----------+-------------------+------------+-----------------------------------------------------------+
|           5 | Vikram    | Singh    | vikram@example.com | 5432109876 | C:UsersBiswarupDesktopCodingChallengeVikram.txt.txt      |
+-------------+-----------+----------+-------------------+------------+-----------------------------------------------------------+
1 row in set (0.00 sec)
```

11.

```
mysql> SELECT DISTINCT JobTitle, Salary
    -> FROM Jobs
    -> WHERE Salary BETWEEN 60000 AND 80000;
+------------------------+--------+
| JobTitle               | Salary |
+------------------------+--------+
| Software Developer     |  80000 |
| Web Developer          |  75000 |
| Education Consultant   |  80000 |
| IT Support Specialist  |  70000 |
+------------------------+--------+
4 rows in set (0.00 sec)
```

12.

```
mysql> SELECT *
    -> FROM Jobs
    -> LEFT JOIN Applications ON Jobs.JobID = Applications.JobID
    -> WHERE Applications.ApplicationID IS NULL;
Empty set (0.00 sec)
```

13.

```
mysql> SELECT a.FirstName,a.LastName,
    -> c.CompanyName,j.JobTitle
    -> FROM Applicants a
    -> JOIN Applications app ON a.ApplicantID = app.ApplicantID
    -> JOIN Jobs j ON app.JobID = j.JobID
    -> JOIN Companies c ON j.CompanyID = c.CompanyID;
+-----------+-----------+----------------------+------------------------+
| FirstName | LastName  | CompanyName          | JobTitle               |
+-----------+-----------+----------------------+------------------------+
| Amit      | Kumar     | Tech Solutions India | Software Developer      |
| Priya     | Sharma    | Innovate IT Services | Data Scientist          |
| Raj       | Verma     | Global Innovations   | Network Engineer        |
| Anjali    | Gupta     | InfoTech Hub         | UI/UX Designer          |
| Vikram    | Singh     | Coders Paradise      | Java Developer          |
| Neha      | Shah      | DataCrafters         | Database Administrator  |
| Sandeep   | Mishra    | WebWizards           | Web Developer           |
| Swati     | Rao       | EduTech Innovations  | Education Consultant    |
| Rahul     | Joshi     | SmartSolutions Ltd   | IT Support Specialist   |
| Pooja     | Gandhi    | SysGenius Technologies | Systems Analyst       |
+-----------+-----------+----------------------+------------------------+
10 rows in set (0.00 sec)
```

14.

```
mysql> SELECT c.CompanyID,c.CompanyName,
    -> COUNT(DISTINCT j.JobID) AS PostedJobsCount
    -> FROM Companies c
    -> LEFT JOIN Jobs j ON c.CompanyID = j.CompanyID
    -> LEFT JOIN Applications app ON j.JobID = app.JobID
    -> GROUP BY c.CompanyID, c.CompanyName;
+-----------+------------------------+-----------------+
| CompanyID | CompanyName            | PostedJobsCount |
+-----------+------------------------+-----------------+
|         1 | Tech Solutions India   |               1 |
|         2 | Innovate IT Services   |               1 |
|         3 | Global Innovations     |               1 |
|         4 | InfoTech Hub           |               1 |
|         5 | Coders Paradise        |               1 |
|         6 | DataCrafters           |               1 |
|         7 | WebWizards             |               1 |
|         8 | EduTech Innovations    |               1 |
|         9 | SmartSolutions Ltd     |               1 |
|        10 | SysGenius Technologies |               1 |
+-----------+------------------------+-----------------+
10 rows in set (0.00 sec)
```

15

```
mysql> SELECT a.ApplicantID,a.FirstName,a.LastName,
    -> c.CompanyID,c.CompanyName,
    -> j.JobID,j.JobTitle
    -> FROM Applicants a
    -> CROSS JOIN Companies c
    -> CROSS JOIN Jobs j
    -> LEFT JOIN Applications app ON a.ApplicantID = app.ApplicantID AND j.JobID = app.JobID;
+-------------+-----------+----------+-----------+----------------------+-------+----------------------+
| ApplicantID | FirstName | LastName | CompanyID | CompanyName          | JobID | JobTitle             |
+-------------+-----------+----------+-----------+----------------------+-------+----------------------+
|           1 | Amit      | Kumar    |        10 | SysGenius Technologies |     1 | Software Developer   |
|           2 | Priya     | Sharma   |        10 | SysGenius Technologies |     1 | Software Developer   |
|           3 | Raj       | Verma    |        10 | SysGenius Technologies |     1 | Software Developer   |
|           4 | Anjali    | Gupta    |        10 | SysGenius Technologies |     1 | Software Developer   |
|           5 | Vikram    | Singh    |        10 | SysGenius Technologies |     1 | Software Developer   |
|           6 | Neha      | Shah     |        10 | SysGenius Technologies |     1 | Software Developer   |
|           7 | Sandeep   | Mishra   |        10 | SysGenius Technologies |     1 | Software Developer   |
|           8 | Swati     | Rao      |        10 | SysGenius Technologies |     1 | Software Developer   |
|           9 | Rahul     | Joshi    |        10 | SysGenius Technologies |     1 | Software Developer   |
|          10 | Pooja     | Gandhi   |        10 | SysGenius Technologies |     1 | Software Developer   |
```

16

```
mysql> SELECT c.CompanyID,c.CompanyName
    -> FROM Companies c
    -> JOIN Jobs j ON c.CompanyID = j.CompanyID
    -> GROUP BY c.CompanyID, c.CompanyName
    -> HAVING MAX(j.Salary) > (SELECT AVG(Salary) FROM Jobs);
+-----------+------------------------+
| CompanyID | CompanyName            |
+-----------+------------------------+
|         2 | Innovate IT Services   |
|         4 | InfoTech Hub           |
|         6 | DataCrafters           |
|        10 | SysGenius Technologies |
+-----------+------------------------+
4 rows in set (0.00 sec)
```

17.

```
mysql> SELECT
    ->     CONCAT(a.FirstName, ' ', a.LastName) AS ApplicantName,
    ->     CONCAT(j.JobLocation, ' at ', c.Location) AS JobAndCompanyLocation
    -> FROM
    ->     Applicants a
    -> JOIN
    ->     Applications app ON a.ApplicantID = app.ApplicantID
    -> JOIN
    ->     Jobs j ON app.JobID = j.JobID
    -> JOIN
    ->     Companies c ON j.CompanyID = c.CompanyID;
+----------------+---------------------------+
| ApplicantName  | JobAndCompanyLocation     |
+----------------+---------------------------+
| Amit Kumar     | Mumbai at Mumbai          |
| Priya Sharma   | Bangalore at Bangalore    |
| Raj Verma      | Delhi at Delhi            |
| Anjali Gupta   | Hyderabad at Hyderabad    |
| Vikram Singh   | Chennai at Chennai        |
| Neha Shah      | Pune at Pune              |
| Sandeep Mishra | Kolkata at Kolkata        |
| Swati Rao      | Jaipur at Jaipur          |
| Rahul Joshi    | Ahmedabad at Ahmedabad    |
| Pooja Gandhi   | Chandigarh at Chandigarh  |
+----------------+---------------------------+
10 rows in set (0.00 sec)
```

18.

```
mysql> SELECT *
    -> FROM Jobs
    -> WHERE JobTitle LIKE '%Developer%' OR JobTitle LIKE '%Engineer%';
+-------+-----------+--------------------+----------------------------------------------+-------------+--------+-----------+---------------------+
| JobID | CompanyID | JobTitle           | JobDescription                               | JobLocation | Salary | JobType   | PostedDate          |
+-------+-----------+--------------------+----------------------------------------------+-------------+--------+-----------+---------------------+
|     1 |         1 | Software Developer | Develop and maintain software applications.  | Mumbai      |  80000 | Full-time | 2024-01-23 10:30:00 |
|     3 |         3 | Network Engineer   | Designing and implementing computer networks.| Delhi       |  90000 | Full-time | 2024-01-21 11:15:00 |
|     5 |         5 | Java Developer     | Developing and maintaining Java applications. | Chennai     |  85000 | Contract  | 2024-01-19 14:20:00 |
|     7 |         7 | Web Developer      | Building and maintaining websites.           | Kolkata     |  75000 | Part-time | 2024-01-17 15:40:00 |
+-------+-----------+--------------------+----------------------------------------------+-------------+--------+-----------+---------------------+
4 rows in set (0.00 sec)
```

19.

```
mysql> SELECT a.ApplicantID,a.FirstName,a.LastName,
    -> j.JobID,j.JobTitle,
    -> IF(app.ApplicantID IS NOT NULL, 'Applied', 'Not Applied') AS ApplicationStatus
    -> FROM Applicants a
    -> CROSS JOIN Jobs j
    -> LEFT JOIN Applications app ON a.ApplicantID = app.ApplicantID AND j.JobID = app.JobID;
+-------------+-----------+----------+-------+--------------------+-------------------+
| ApplicantID | FirstName | LastName | JobID | JobTitle           | ApplicationStatus |
+-------------+-----------+----------+-------+--------------------+-------------------+
|          10 | Pooja     | Gandhi   |     1 | Software Developer | Not Applied       |
|           9 | Rahul     | Joshi    |     1 | Software Developer | Not Applied       |
|           8 | Swati     | Rao      |     1 | Software Developer | Not Applied       |
|           7 | Sandeep   | Mishra   |     1 | Software Developer | Not Applied       |
|           6 | Neha      | Shah     |     1 | Software Developer | Not Applied       |
|           5 | Vikram    | Singh    |     1 | Software Developer | Not Applied       |
|           4 | Anjali    | Gupta    |     1 | Software Developer | Not Applied       |
|           3 | Raj       | Verma    |     1 | Software Developer | Not Applied       |
|           2 | Priya     | Sharma   |     1 | Software Developer | Not Applied       |
|           1 | Amit      | Kumar    |     1 | Software Developer | Applied           |
```

20.

```
mysql> SELECT a.ApplicantID,a.FirstName,a.LastName,
    -> c.CompanyID,c.CompanyName,c.Location AS CompanyLocation
    -> FROM Applicants a
    -> JOIN Applications app ON a.ApplicantID = app.ApplicantID
    -> JOIN Jobs j ON app.JobID = j.JobID
    -> JOIN Companies c ON j.CompanyID = c.CompanyID
    -> WHERE c.Location = 'Chennai'
    -> AND app.CoverLetter > 2;
+-------------+-----------+----------+-----------+-----------------+-----------------+
| ApplicantID | FirstName | LastName | CompanyID | CompanyName     | CompanyLocation |
+-------------+-----------+----------+-----------+-----------------+-----------------+
|           5 | Vikram    | Singh    |         5 | Coders Paradise | Chennai         |
+-------------+-----------+----------+-----------+-----------------+-----------------+
1 row in set (0.00 sec)
```